

NOTES ON THE LIFE HISTORY OF *CHILASA MOERNERI MOERNERI* (AURIVILLIUS) (LEPIDOPTERA: PAPILIONIDAE)

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Abstract

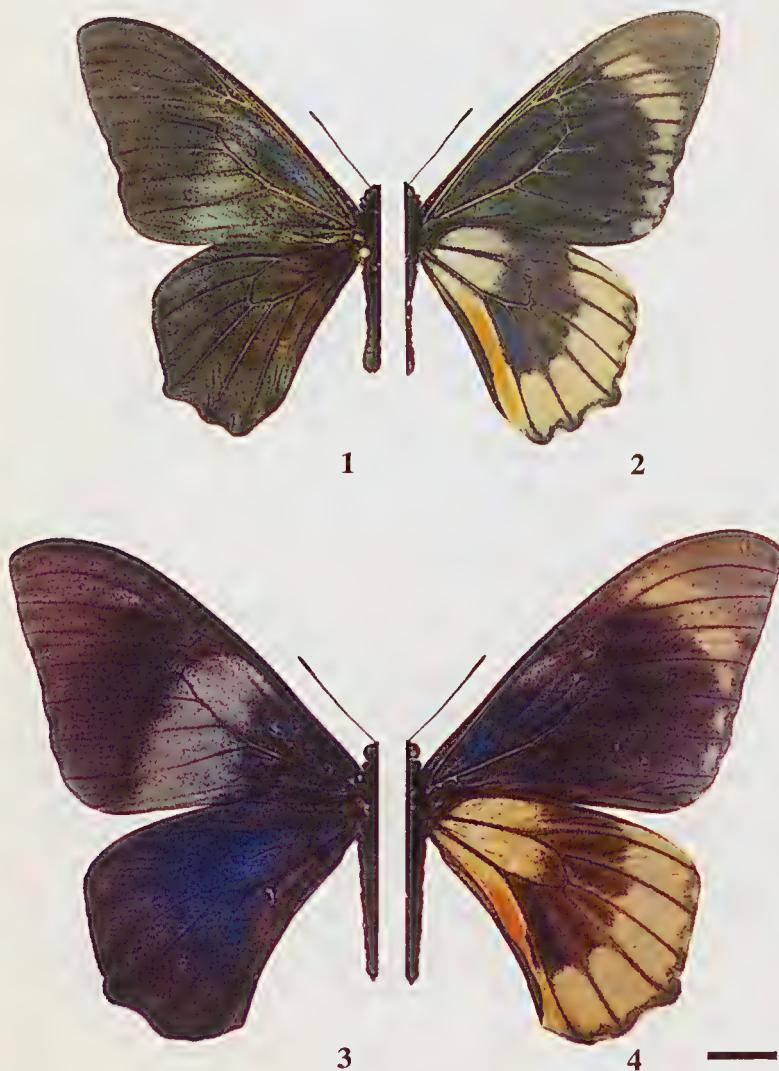
The pre-pupal larva and pupa of *Chilasa moerneri moerneri* (Aurivillius), from New Ireland, Papua New Guinea, are described and figured. Adults of both sexes are also illustrated, previous photographs of the male being a misidentified female.

Introduction

Chilasa moerneri (Aurivillius) has commonly been placed within *Papilio* Linnaeus. Hancock (1983), however, referred it, together with *C. laglaizei* (Depuiset) and *C. toboroi* (Ribbe), to *Chilasa* Moore, which may be separated into subgenera *Chilasa* and *Agehana* Matsumura. *Chilasa laglaizei* is known from Aru, Waigeo and mainland New Guinea (Parsons 1998), while *C. toboroi* is recorded from Bougainville and the Solomon Islands. Subspecies *C. t. straatmani* Racheli was described from a single male from Santa Isabel (Racheli 1979), while Straatman (1975) and Parsons (1998) additionally recorded this taxon from Malaita Island, where John Tennent (pers. comm., 1997) has also seen specimens flying.

Aurivillius (1919) described *C. moerneri*, after a Mr. Birger Mörner, from a single male from New Ireland that was illustrated as a black and white line drawing. This holotype male is missing and there is no record of any published photographs of it. Typical *C. m. moerneri* was otherwise only known from two females and D'Abrera (1971) suggested (erroneously) that the butterfly was probably extinct. The two females are in the Natural History Museum, London and the Australian National Insect Collection, respectively. The former specimen was figured as a male by both Parsons (1998) and D'Abrera (1971, 1978, 1990). Additionally, Straatman (1975) stated that he saw a few specimens taken in New Ireland during 1968. Subspecies *C. m. mayhoferi* Bang-Haas was described also from a single male taken in the south-eastern Bainings Mountains, eastern New Britain, at 700 m (Bang-Haas 1939). This specimen has never been illustrated and is now also apparently lost.

During July, 1998 two pre-pupal larvae and a dead pupa of *C. m. moerneri* were discovered by the author in a small clearing in montane rainforest at approximately 1000 m in the Schleinitz Mountains, central New Ireland. These emerged as a pair (Figs 1-4), a photograph of the true male being provided for the first time.



Figs 1-4. Adults of *Chilasa moermeri moermeri*. Odd numbers uppersides, even numbers undersides. (1, 2) male; (3, 4) female. Scale bar = 1 cm.



Figs 5-8. Early stages of *Chilasa moerneri moerneri*. (5) pre-pupal larva (lateral view); (6) pre-pupal larva (dorsal view); (7) pupa (lateral view); (8) pupa (dorsal view). Scale bar = 1 cm.

Life history

Larva. Pre-pupal stage (Figs 5, 7) 61 mm long; prothoracic shield and head black; body ground colour pale ochreous yellow; body segments with a pair of black dorsolateral tubercles about 4.5 mm long with broad black bases; all segments joined by broad, black ring, widening laterally into large, triangular spot below spiracles, middorsally each ring with a white, elongated spot.

Pupa (Figs 6, 8). 58 mm long; leathery; head with shallow central trough; abdominal segment 8 with a long and segment 9 with a shorter, blunt appendage lateroventrally; cremaster broad and cephalad, yellow dorsally, black ventrally; abdominal segments each with a pair of small dorsolateral humps; thoracic segments with two pairs of humps, those laterally are more prominent than dorsolateral humps; ground colour cadmium yellow; segments 5-9 and inner margin of wing case laterally with broken, broad, brown stripe surrounding the spiracles.

Discussion

The pre-pupae and pupae of *C. moerneri* are morphologically similar to those of *C. laglaizei* and *C. toboroi*, as described by Straatman (1975), but are distinctive in some respects. The pre-pupal larvae of all three species have rugose dorsolateral tubercles and are yellow with black segments and black and white lateral spots. The pre-pupa of *C. moerneri* has tubercles that are intermediate in length between those of *C. laglaizei* and *C. toboroi*.

Pupae of *C. moerneri* are similar to the other two species, all three having a characteristic cylindrical, leathery appearance and a yellow ground colour broken by a series of dark, lateral, abdominal spots. The pupa of *C. moerneri* is slightly darker than that of *C. laglaizei* and *C. toboroi* and the dorsolateral humps on the thorax are much less prominent. For both of the specimens discussed here, pupation occurred at around 3 am and adults emerged 16 days later at approximately 8 am. Straatman (1975) recorded pupal durations of 14-16 and 16-18 days respectively for *C. laglaizei* and *C. toboroi*.

Shortly after eclosion, both adults promptly dropped to the ground, apparently being very weak. Each adult had to be held between thumb and forefinger for around three hours as they could only be persuaded to hold onto netting material for a short time. The apparent rarity of *C. moerneri* in nature may possibly be attributed to the poor ability of adults to expand and dry their wings upon emergence.

The larval foodplant of *C. moerneri* is unknown. Both *C. laglaizei* and *C. toboroi* are known to feed on plants belonging to the Lauraceae (Straatman 1975). Several lauraceous plants (including *Litsea* sp.) were noted within 15 metres of the pre-pupal larvae, which were located on low vegetation less than 30 cm from the ground.

Only a single specimen of *C. moernerii*, a female, was observed by the author during 2 months field research in New Ireland in 1998. In flight, the female was reminiscent of a large *Eleppone anactus* (W. S. Macleay) from Australia but was more aggressive and flew at canopy level. It was noted to pause briefly at flowers some 25 m above the ground. A further field trip to New Ireland during October-November 2000 yielded no adults or early stages of this taxon.

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